Fig. 9 shows the view IX of the mechanical sleeve or bearing 116 of the connection of Fig. 7. The two upward bent ends 110a, 110b of connection distributor 110 are bent in the contact area complementarily and symmetrically to the symmetry plane 123 perpendicular to the plane of viewing, symmetry plane 123 being bent in a semi-circle in order to be able to receive a contact pin. The ends of connection distributors 110a, 110b are secured flexibly in the mechanical sleeve or bearing area by means of a corrugated retaining ring 124.

Patent Claims

1. Device for converting electric energy into mechanical energy and/or vice versa with a rotor (4) and a stator (2), particularly a combined motor/generator device (1), wherein coil windings (6) having at least two winding ends (17a, 17b; 18a, 18b; 19a, 19b) are arranged on the rotor (4) and/or the stator (2) in turn having a circumferential layout direction (13) following one after the other, and the winding ends (17a, 17b; 18a, 18b; 19a, 19b) of the various coil windings (6a; 6b; 6c) are electrically connected with one another with formation of groups of connections, whereby the device includes a connection device (7, 8, 9, 10) for the connection of the winding ends (17a, 17b; 18a, 18b; 19a, 19b) of a group of connections with electrically conductive connection distributors (8, 9, 10) running in circumferential direction, **characterized in that** the connection distributors (8, 9, 10) are of one integral piece and are guided toward the exterior of the device and in turn form a connection device (14, 15, 16), and that the groups of connections can be electrically contacted through the connection devices (14, 15, 16) on the exterior of the device.

2. Device as in Claim 1, characterized in that the connection distributors (8, 9, 10) form a mechanical sleeve or bearing or plug element outside the device.

3. Device as in Claim 1 or 2, characterized in that each winding end (17a, 17b; 18a, 18b; 19a, 19b) is connected with the associated connection distributor (8, 9, 10) in the close

vicinity of the relevant coil winding (6a, 6b, 6c).

4. Device as in one of the Claims 1 to 3, characterized in that the connection distributors (8, 9, 10) have a cutting/clamping device (21; 121) configured of one integral piece with the associated winding ends (17a, 17b; 18a, 18b; 19a, 19b) for the electric connection.

5. Device as in one of the Claims 1 to 4, characterized in that the connection distributors (8, 9, 10) for each connection group include an electrically conductive ring (108, 109, 111).

6. Device as in one of the Claims 1 to 4, characterized in that the connection distributors (8, 9, 10) for each connection group have at least one electrically conductive band (8a, 8b; 9a, 9b; 10a, 10b), which runs in its lengthwise direction at least in phases or stages and at least partially in a circle in circumferential direction (13).

7. Device as in Claim 6, characterized in that the connection distributors (8, 9, 10) for each connection group have two essentially semi-circular bands (8a, 8b; 9a, 9b; 10a, 10b) running in circumferential direction, which in turn are guided in one integral piece toward the exterior of the device and there together form a mechanical sleeve or bearing area for a connection device (14, 15, 16).

8. Device as in Claim 7, characterized in that the two bands (110a, 110b) in the mechanical sleeve or bearing area (114) are connected by an elastic or flexible element, preferably by a corrugated retaining ring (124).

9. Device as in one of the Claims 5 to 8, characterized in that for the individual connection groups appropriate rings (108, 109, 110) or bands (8a, 8b; 9a, 9b; 10a, 10b) are arranged axially one following the other or they have different diameters and are arranged concentrically radially one behind the other.

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10. Device as in one of the Claims 1 to 9, characterized in that the connection distributors (8, 9, 10) are arranged electrically insulated from one another in a receiving means (7) of the connection device (7, 8, 9, 10) which can be axially or radially securely mounted on the

rotor (4) and/or stator (2).

11. Method for producing a device as in one of the Claims 1 to 10, with the following steps :

- Embedding of the connection distributors (8, 9, 10) in a receiving means (7) of the connection device (7, 8, 9, 10) in such a manner that the connection distributors (8, 9, 10) not belonging to one common connection group are electrically insulated from one another,
- Tight fastening of the connection device (7, 8, 9, 10) to the rotor (4) and/or the stator (2),
- Electric connection of the winding ends (17a, 17b; 18a, 18b; 19a, 19b) with the associated connection distributors (8, 9, 10), and
- Forming of a connection device (14, 15, 16) of the connection distributors (8, 9, 10) made up of one integral piece and guided toward the exterior, for the electric contacting of the connection groups to the exterior of the device.

12. Method as in Claim 11 or 12, characterized in that the electric connection of the winding ends (17a, 17b; 18a, 18b; 19a, 19b) with the associated connection distributors (8, 9, 10) occurs in the close vicinity of the relevant coil winding (6a, 6b, 6c) by insertion in turn in a cutting/clamping device (21) provided on the connection distributors (8, 9, 10) and preferably of one piece, or by gluing, soldering or welding.

13. Method as in Claim 11 or 12, characterized in that the receiving means (7) are sealed shut with the embedded connection distributors (8, 9, 10), preferably by dipping into an electrically insulating synthetic resin, whereby preferably following the sealed closing off, contact points are accessible on the connection distributors (8, 9, 10) for the electric connection with the winding ends (17a., 17b; 18a, 18b; 19a, 19b).

14. Method as in Claim 11 or 12, characterized in that the rotor (4) or the stator (2) together with the connection device (7, 8, 9, 10) sealed onto it and connected with the winding

ends (17a, 17b; 18a, 18b; 19a, 19b) is sealed off, preferably by dipping in an electrically insulating synthetic resin.